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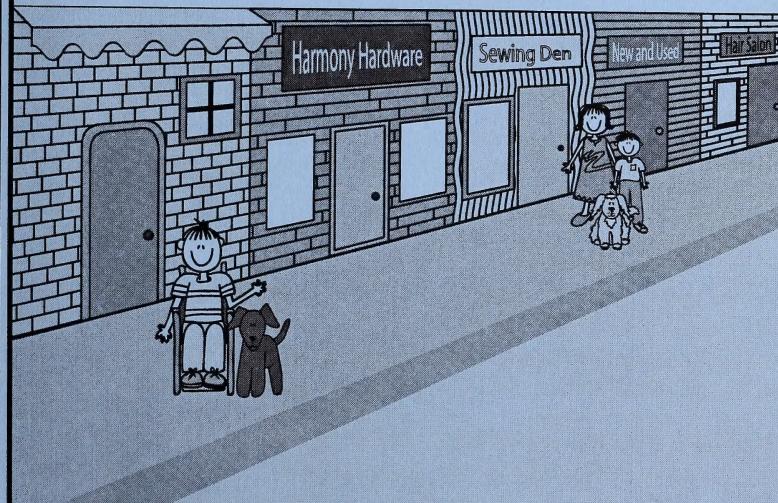


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## GRADE THREE MATHEMATICS: MODULE 3

# PATTERNS EVERWHERE

Home Instructor's Guide: Days 10-18  
and  
Assignment Booklet 3B



Learning  
Technologies  
Branch

**Alberta**  
LEARNING

Grade Three Mathematics  
Module 3: Patterns Everywhere  
Home Instructor's Guide: Days 10–18 and Assignment Booklet 3B  
Learning Technologies Branch  
ISBN 0-7741-2308-7

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Students	✓
Teachers	✓
Administrators	
Home Instructors	✓
General Public	
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- Learning Technologies Branch, <http://www.learning.gov.ab.ca/ltb>
- Learning Resources Centre, <http://www.lrc.learning.gov.ab.ca>

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## MODULE 3: PATTERNS EVERYWHERE

**DAY 10:** In today's lesson, the student learns how to use the calculator to skip count by 2s, 5s, 10s, and 100s. If you do not have a TI-108 calculator, you may have to modify the instructions for some of the activities.

### DAY 10: LESSON 1

#### Answers

1. 5
2. 10
3. 35
4. 352
5. 357 362 367 372
6. a. 738 **743** 748 753 758 **763**  
b. 951 **956** 961 966 **971** 976  
c. 497 **502** 507 **512** 517 **522**
7. a. 578 **588** 598 608 **618** 628  
b. 793 **803** 813 823 **833** 843  
c. 489 **499** 509 **519** 529 **539**
8. a. 567 **569** 571 **573** 575 **577**  
b. 902 **904** 906 **908** 910 **912**  
c. 599 **601** 603 **605** 607 **609**

### DAY 10: LESSON 2

#### Answers

Estimates and times will vary. Guesses between 30 to 60 seconds are fairly accurate for counting by 1s. Most students will take 30 to 45 seconds to count by 1s to 100. The student should realize that it will take about half as much time to count by 2s as by 1s. Most students will take 15 to 25 seconds to count by 2s. The student should realize that counting by 5s will be less than half the time it took to count by 2s. Times will vary, but it should take less than 15 seconds to count by 5s. The student should realize that counting by 10s will take about half as much time as counting by 5s. It should take less than 10 seconds to count by 10s. Counting by 10s is the quickest way to count.

**DAY 11:** In this lesson, your student will use a calculator to skip count by numbers that may not have been practised in earlier grades. Counting by 3s, 4s, 8s, and 9s helps prepare your student for work with multiplication later this year. Assist the student with the timed exercise and filling in the Subtraction Facts Graph.

### DAY 11: LESSON 1

#### Answers

1.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

- In the columns with even numbers, alternating numbers are coloured. The student may say, “Every other number is coloured going up and down the even numbers.”
- After 20, the last digit starts repeating.

4.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

5. Diagonal (or “slanted”) lines are formed on even numbers.  
 6. The last digit starts repeating after 40.  
 7. The numbers coloured in the 8s chart are also coloured in the 4s chart.

**Timed Exercise Answers:**

$$12 - 5 = 7 \quad 16 - 7 = 9 \quad 17 - 8 = 9 \quad 10 - 7 = 3$$

$$13 - 4 = 9 \quad 15 - 8 = 7 \quad 11 - 4 = 7 \quad 14 - 5 = 9$$

$$16 - 8 = 8 \quad 18 - 9 = 9 \quad 12 - 6 = 6 \quad 13 - 7 = 6$$

$$\begin{array}{r} 10 \\ - 6 \\ \hline 4 \end{array} \qquad \begin{array}{r} 11 \\ - 8 \\ \hline 3 \end{array} \qquad \begin{array}{r} 13 \\ - 5 \\ \hline 8 \end{array} \qquad \begin{array}{r} 12 \\ - 9 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 14 \\ - 7 \\ \hline 7 \end{array} \qquad \begin{array}{r} 15 \\ - 9 \\ \hline 6 \end{array} \qquad \begin{array}{r} 10 \\ - 6 \\ \hline 4 \end{array} \qquad \begin{array}{r} 11 \\ - 3 \\ \hline 8 \end{array}$$

**DAY 12:** The student will learn to count by 25s. This is difficult for some students. Spend extra time skip counting and writing the pattern if your student has difficulty with this. Relate counting by 25s to counting by quarters. Ask the student to count quarters for extra practice.

### DAY 12: LESSON 1

#### Answers

1. The student should realize that one square would be coloured in the centre of the 20s row and the 70s row and that the 50 and 100 squares would be coloured in, too. Some students may draw a diagram like the one below.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

2. The hundreds digit would change, but the pattern of 25, 50, and 75 would continue.
3. 25
4.  $\boxed{+}$  and  $\boxed{2}$   $\boxed{5}$
5.  $\boxed{=}$

6. 25    50    75    100  
 125    150    175    200  
 225    250    275    300  
 325    350    375    400  
 425    450    475    500

7. The hundreds digit increases by one each time.

8. a. 350    **375**    400    425    450    475  
 b. 275    **300**    325    350    375    400  
 c. 725    **750**    775    800    825    850  
 d. 875    **900**    925    950    975    1000

## DAY 12: LESSON 2

### Answers

1. Most students will show how they counted by 25s.

$$25, 50, 75, 100, 125, 150$$

Your student may also add.

$$25 + 25 + 25 + 25 + 25 = 150$$

Sarah and her dad made 150 cookies.

2. Most students will count by 5s to find the answer.

$$5, 10, 15, 20, 25, 30, 35, 40$$

Your student may also add.

$$5 + 5 + 5 + 5 + 5 + 5 + 5 = 40$$

Fiona made 40 pastries.

3. Most students will add the 6 quarters to the 150 pennies by adding on six 25s.

$$175, 200, 225, 250, 275, 300$$

Your student may also add.

$$150 + 25 + 25 + 25 + 25 + 25 + 25 = 300$$

There were 300¢. Students may convert the answer to dollars and say there were \$3.00.

**DAY 13:** Today, the student learns to count backward. Hundred charts and calculators are used to help the student understand the patterns.

### DAY 13: LESSON 1

#### Answers

1. a. 70 68 **66** **64** 62 60 58  
b. 54 52 **50** **48** 46 44 42  
c. 92 90 **88** **86** 84 82 80  
d. 38 36 **34** **32** 30 28 26
2. a. 564 562 **560** **558** 556 **554** **552**  
b. 206 204 **202** **200** 198 **196** **194**  
c. 978 976 **974** **972** **970** **968** **966**  
d. 720 718 **716** **714** **712** **710** **708**
3. a. 55 50 **45** **40** 35 **30** **25**  
b. 90 85 **80** **75** **70** **65** **60**  
c. 765 760 **755** **750** **745** **740** **735**  
d. 570 565 **560** **555** **550** **545** **540**
4. 10 20 30 40 50 60 70 80 90 100
5. a. 100 90 **80** **70** **60** **50** **40**  
b. 140 130 **120** **110** **100** **90** **80**  
c. 650 640 **630** **620** **610** **600** **590**  
d. 510 500 **490** **480** **470** **460** **450**
6. 100 200 300 400 500 600 700 800 900 1000
7. a. 800 700 **600** **500** **400** **300** **200**  
b. 700 600 **500** **400** **300** **200** **100**  
c. 1000 900 **800** **700** **600** **500** **400**

### DAY 13: LESSON 2

#### Answers

1. a. 615 610 **605** **600** **595** **590** **585**  
b. 990 985 **980** **975** **970** **965** **960**  
c. 430 425 **420** **415** **410** **405** **400**
2. a. 710 708 **706** **704** **702** **700** **698**  
b. 532 530 **528** **526** **524** **522** **520**  
c. 698 696 **694** **692** **690** **588** **586**

**DAY 14:** The student is presented with a variety of different number patterns and must figure out the pattern “rule.” After assisting the student with today’s timed exercise, take the time to look at the graph and discuss the student’s progress. This would be a good time to encourage more practise using flash cards, some computer-generated exercises, or a website. The following websites may be helpful for extra practice:

- <http://www.aaamath.com>
- <http://www.aplusmath.com>

PAY 14: LESSON 1

## **Answers**

1. The student may mention that the tens digit increased by 1 each time or that all the numbers ended in 0s.
2. The pattern decreases by 10 each time or shows counting backward by 10s.
3.
  - a. Description: counting forward by 2s or increasing by 2 Rule: +2
  - b. Description: counting backward by 5s or decreasing by 5 Rule: -5
  - c. Description: counting by 25s or increasing by 25 Rule: +25
  - d. Description: counting backward by 10s or decreasing by 10 Rule: -10
  - e. Description: counting by 100s or increasing by 100 Rule: +100
4. Answers will vary. Make sure the pattern shows a consistent repetition.

**Timed Exercise Answers:**

$$12 - 7 = 5 \quad 16 - 9 = 7 \quad 17 - 9 = 8 \quad 10 - 3 = 7$$

$13 - 5 = 8$      $15 - 6 = 9$      $11 - 8 = 3$      $14 - 7 = 7$

$$16 - 7 = 9 \quad 18 - 8 = 10 \quad 12 - 5 = 7 \quad 13 - 6 = 7$$

10	11	13	12
- 5	- 7	- 8	- 4
<b>5</b>	<b>4</b>	<b>5</b>	<b>8</b>

14	15	10	11
$- 6$	$- 8$	$- 9$	$- 2$
<b>8</b>	<b>7</b>	<b>1</b>	<b>9</b>

**DAY 15:** Extending number patterns is the focus of this lesson. The student discovers the number pattern and learns to then extend the pattern. Some problem-solving activities that require a pattern to be extended are also included.

### DAY 15: LESSON 1

#### Answers

1. The pattern shows counting by 5s backward or the pattern decreases by 5.
2. -5
3. 60 55 50 45 40 **35** **30** **25** **20**
4. a. Rule: **+10**  
150 160 170 180 **190** **200** **210** **220**
- b. Rule: **+25**  
600 625 650 675 **700** **725** **750** **775**
- c. Rule: **-2**  
876 874 872 870 **868** **866** **864** **862**
- d. Rule: **-100**  
845 745 645 545 **445** **345** **245** **145**
- e. Rule: **+10**  
457 467 477 487 **497** **507** **517** **527**
- f. Rule: **+5**  
208 213 218 223 **228** **233** **238** **243**

### DAY 15: LESSON 2

#### Answers

1. a. The student has to find out the number on the next three licence plates.
- b. The student can solve the problem by continuing the pattern.
- c. The pattern rule is +10. The student may solve the problem by adding 10 to each number or by counting on by 10s.

d. The number of the next three licence plates will be HMT-599, HMT-609, and HMT-619. It is also acceptable if the student does not include the letters and writes only the numbers.

e. The student should indicate whether the answer makes sense and answers the question.

2. a. The student has to find out how much the calf will weigh in April.

b. The student can find the pattern and then extend it to find the answer.

c. The pattern rule is + 25.

Month	Weight (kilograms)
October	250
November	275
December	300
January	325
February	350
March	300
April	325

d. Sarah's calf will weigh 400 kilograms in April if the pattern continues.

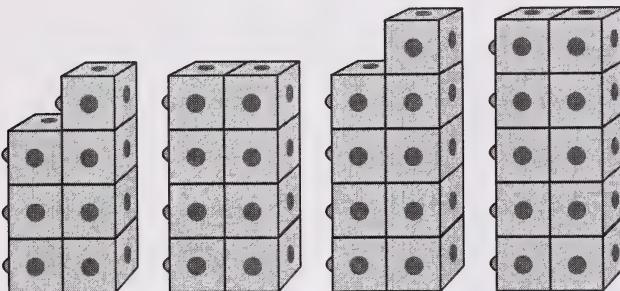
e. The student should indicate whether the answer makes sense and answers the question.

**DAY 16:** Even and odd numbers are discussed. The student experiments with combining even and odd numbers and makes predictions about the results. In Assignment Booklet 3B, the student extends this knowledge to discover subtraction patterns.

**DAY 16: LESSON 1****Answers**

- The student will probably mention that the tops of every second block pattern are even or level. The words even and odd may be used. Any description that correctly describes the blocks is acceptable.
- An even number of blocks makes a level or even shape.
- An odd number of blocks makes an uneven shape.

4.



- No, the pattern of even and uneven blocks would not change.
- a. uneven  
 b. even  
 c. uneven  
 d. even  
 e. even  
 f. uneven
- a. 12  
b. even
- a. 10  
b. even
- a. The student may choose any even numbers. Be sure both numbers are even and that the calculation is correct.  
  
 b. even
- When two even numbers are added, the answer is even.
- The student's prediction may vary. Encourage the student to prove any prediction.
- The student should show at least five examples of odd numbers added to odd numbers. Check that both numbers are odd and that the calculations are correct.
- When two odd numbers are added, the answer is even.

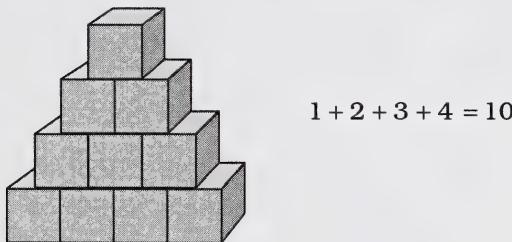
14. The student's prediction may vary. Encourage the student to prove any prediction.
15. The student should show at least five examples of odd numbers added to even numbers. Check that the addends are an odd number and an even number and that the calculations are correct.
16. When an odd number and an even number are added, the answer is odd.

**DAY 17:** The student reviews problem-solving strategies that have been discussed and applies the strategies to a variety of problems that involve patterns. The student writes problem-solving questions for you and the teacher to solve.

### DAY 17: LESSON 1

#### Answers

1. a. The student has to find out how many blocks Luke will need to build Step 4.
- b. The student could solve the problem by drawing step four and counting the total or by using the pattern and adding.
- c. The student should show the drawing or addition.



- d. Luke will need 10 blocks to build Step 4.
- e. The student should indicate whether the answer makes sense and answers the question.
2. a. The student has to find out how many flowers Sarah's mom used when she used 50 hearts.
- b. The student could draw the pattern, act it out using real objects, or find half of 50.
- c. The student should show how the problem was solved by drawing or realizing that half of 50 is 25. (25 + 25 makes 50; or when counting by 25s, the pattern is 25, 50.)
- d. Sarah's mom stencilled 25 flowers when she used 50 hearts.

- e. The student should indicate whether the answer makes sense and answers the question.

3. a. The student has to find out what the next three numbers in the pattern are.

b. The student must find out what the pattern is and extend it. A calculator or the hundred chart could be used.

c. The student should show the pattern extended three places.  
175, 200, 225, 250, 275, 300, 325.

d. The next three numbers in the pattern are 275, 300, and 325.

e. The student should indicate whether the answer makes sense and answers the question.

4. Answers will vary. The student should create a problem that involves a repeating pattern.

**DAY 18:** This lesson reviews the concepts that were introduced in Module 3. If your student experiences any difficulty with the review questions, encourage him or her to review the pertinent section in the Student Module Booklet. Complete the Home Instructor's Checklist in Assignment Booklet 3B. Submit Assignment Booklet 3B to the teacher.

## ASSIGNMENT BOOKLET 3B

Grade Three Mathematics  
Module 3: Days 10–18

### Home Instructor's Comments and Questions

### FOR SCHOOL USE ONLY

Assigned Teacher:

Date Assignment Received:

Grading:

Home Instructor's Signature

### FOR HOME INSTRUCTOR USE (if label is missing or incorrect)

Student File Number:

Date Submitted:

Apply Module Label Here

Name

Address

Postal Code

*Please verify that preprinted label is for  
correct course and module.*

### Teacher's Comments

Teacher's Signature

**Home Instructor:** Keep this sheet when it is returned to you as a record of the student's progress.

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- Are all the assignments completed? If not, explain why.
- Has your work been reread to be sure the spelling and details are correct?
- Is the record form filled out and the correct module label attached?

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**GRADE THREE MATHEMATICS: MODULE 3**

# **PATTERNS EVERYWHERE**

**Assignment Booklet 3B**



**Learning  
Technologies  
Branch**

**Alberta**  
LEARNING

Grade Three Mathematics  
Module 3: Patterns Everywhere  
Assignment Booklet 3B  
Learning Technologies Branch

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	✓
General Public	
Other	



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- Learning Technologies Branch, <http://www.learning.gov.ab.ca/ltb>
- Learning Resources Centre, <http://www.lrc.learning.gov.ab.ca>

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1. Explain how to count by 2s with your calculator.

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2. Use the calculator to count by 5s. Write the numbers that come next.

a. 674 \_\_\_\_\_

b. 397 \_\_\_\_\_

c. 541 \_\_\_\_\_

3. Use the calculator to count by 10s. Write the numbers that come next.

a. 546 \_\_\_\_\_

b. 671 \_\_\_\_\_

c. 893 \_\_\_\_\_

4. Journal Entry

What did you notice when you timed yourself as you used the calculator to count by 1s, 2s, 5s, and 10s?

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1. Use the calculator to count by 3s.

Colour the numbers that you find on the calculator in the hundred chart below.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

2. What pattern do you see? \_\_\_\_\_

3. Look at the last digit of the numbers you have coloured. When does the last digit start repeating?  
\_\_\_\_\_

4. Use the calculator to count by 9s.

Colour the numbers that you find on the calculator in the hundred chart below.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

5. What pattern do you see? \_\_\_\_\_

6. Look at the last digit of the numbers you have coloured. When does the last digit start repeating? \_\_\_\_\_

7. How is this hundred chart like the one you did when you counted by 3s? \_\_\_\_\_

1. Count by 25s. Write the numbers that come next.

a. 500 \_\_\_\_\_

b. 175 \_\_\_\_\_

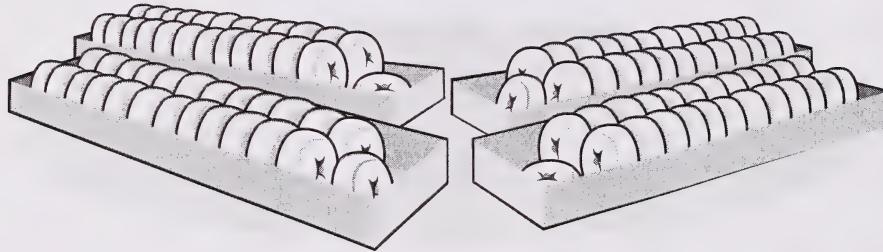
c. 825 \_\_\_\_\_

d. 650 \_\_\_\_\_

e. 275 \_\_\_\_\_

2. Solve the following problems. Show your work, and write a sentence to answer the question.

a. There were 850 items at a bake sale in Sarah's community. Then a local bakery gave 4 boxes with 25 doughnuts in each box. How many items were there in all?



b. The playschool bought 2 boxes of doughnuts and 3 plates of Sarah's cookies for the children. Each box holds 25 doughnuts, and each plate holds 25 cookies. How many treats did they buy in all?

**1. Journal Entry**

Tell at least two methods you can use to help you count backward.

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Use your favourite method to count backward. Write the missing numbers.

**2. Count backward by 10s.**

a. 570 560 \_\_\_\_\_

b. 720 710 \_\_\_\_\_

c. 930 920 \_\_\_\_\_

**3. Count backward by 2s.**

a. 642 640 \_\_\_\_\_

b. 812 810 \_\_\_\_\_

c. 1000 998 \_\_\_\_\_

4. Count backward by 5s.

a. 650 645 \_\_\_\_\_

b. 185 180 \_\_\_\_\_

c. 310 305 \_\_\_\_\_

5. Count backward by 100s.

a. 700 600 \_\_\_\_\_

b. 1000 900 \_\_\_\_\_

c. 800 700 \_\_\_\_\_

1. Look at the number patterns. Describe each pattern and write a pattern rule.

a. 317 315 313 311 309 307

Description: \_\_\_\_\_ Rule: \_\_\_\_\_

b. 591 691 791 891 991

Description: \_\_\_\_\_ Rule: \_\_\_\_\_

c. 295 290 285 280 275 270

Description: \_\_\_\_\_ Rule: \_\_\_\_\_

d. 850 875 900 925 975 1000

Description: \_\_\_\_\_ Rule: \_\_\_\_\_

e. 742 732 722 712 702 692

Description: \_\_\_\_\_ Rule: \_\_\_\_\_

2. Make up a number pattern. Write the description and rule.

\_\_\_\_\_

Description: \_\_\_\_\_ Rule: \_\_\_\_\_

1. Think about the pattern rule. Extend each pattern.

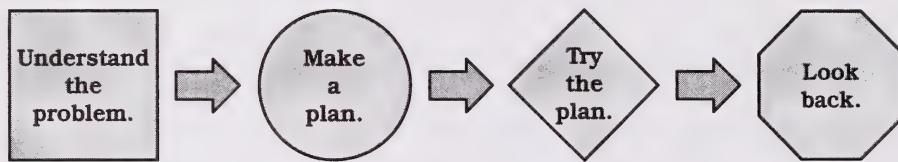
a. 67    65    63    61    \_\_\_\_\_

b. 102    202    302    402    \_\_\_\_\_

c. 980    975    970    965    \_\_\_\_\_

d. 725    750    775    800    \_\_\_\_\_

e. 465    475    485    495    \_\_\_\_\_



Do the problem-solving steps in your mind. Solve the problems. Write the answer in a sentence.

2.



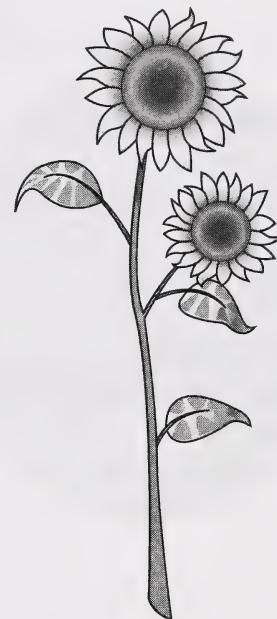
If the pattern continues, what number will the next house be?

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3. Sarah planted a patch of sunflowers to feed the birds. She measured her sunflowers every week.

Week 1	15 cm
Week 2	20 cm
Week 3	25 cm
Week 4	30 cm
Week 5	35 cm



If the pattern continues, how tall will the flowers be by Week 9?

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1. Is the answer even or odd when you add the following?

a. two even numbers: \_\_\_\_\_

b. two odd numbers: \_\_\_\_\_

c. an odd and an even number: \_\_\_\_\_

2. Journal Entry

You made some discoveries about adding even and odd numbers today. How could this knowledge help you check your answers when you are doing addition questions?

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3. Make some predictions about subtracting. (Note: Don't change them even if they turn out incorrect. Remember, they are just a prediction or guess. You can learn a lot from incorrect predictions, too.)

What kind of number will you get if you **subtract** the following:

a. an even number from an even number: \_\_\_\_\_

b. an odd number from an even number: \_\_\_\_\_

c. an odd number from an odd number: \_\_\_\_\_

4. Make up at least five examples to prove or disapprove your predictions.

- subtracting an even number from an even number

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- subtracting an odd number from an even number

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- subtracting an odd number from an odd number

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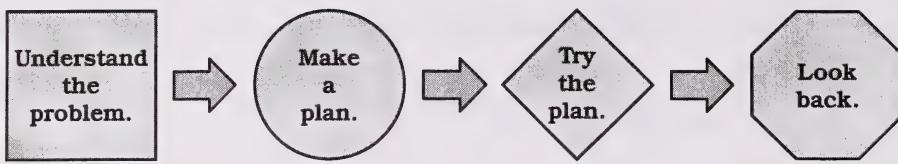
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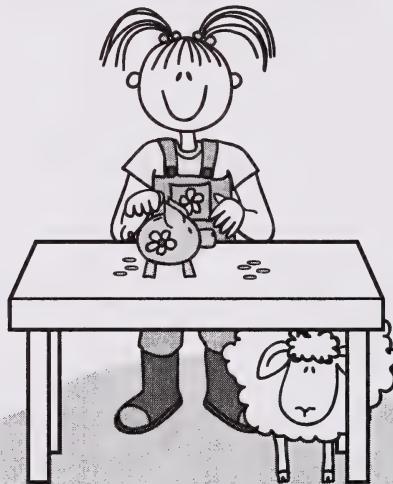
5. Were your predictions correct? \_\_\_\_\_

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Do the problem-solving steps in your mind. Show your work. Write the answer in a sentence.

1. Sarah is saving for a new leash for her dog. She put 2¢ in her piggy bank the first day, 4¢ the second day, and 6¢ the third day. If she continues the pattern, how much money will she have altogether on the fifth day?

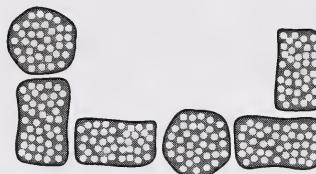


2. Sarah and her mom grow a flower garden. They add something new each year.

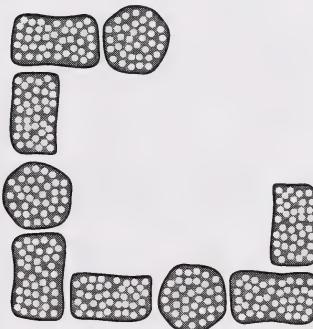
The first year it looked like this.



The second year it looked like this.



The third year it looked like this.



If the pattern continues, what will it look like the fourth year? Show your work.  
Write the answer in a sentence.

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3. Sarah grew three types of vines in one part of the garden. She made a chart of their growth.

	Week 5	Week 6	Week 7	Week 8
Vine 1	125 cm	130 cm	135 cm	140 cm
Vine 2	50 cm	75 cm	100 cm	125 cm
Vine 3	230 cm	240 cm	250 cm	260 cm

If the patterns continue, how tall will each vine be in Week 10? You may extend the chart to help you.

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4. Make up a pattern problem. Your teacher will try to solve it.

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1. Luke sorted animal cards and labelled each group with a sorting rule. Which card is in the wrong group? Explain why you think it is in the wrong group.

**Large 4 legged**

tiger



cow

**Small 6 legged**

ladybug



spider

**Small 2 legged**

chicken



bluebird

**Small 4 legged**

cat



mouse



elephant



giraffe



butterfly



mosquito



sparrow



hamster

The \_\_\_\_\_ is in the wrong group because \_\_\_\_\_

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2. Describe the following patterns in two different ways. Then extend each pattern one more time.

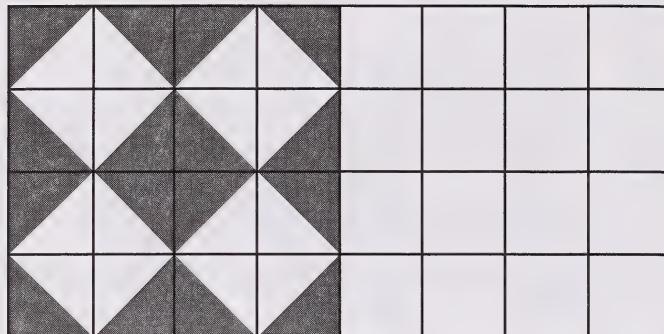
a.



b.



3. Finish the quilt by continuing the pattern.



4. Draw the keys you would press on your calculator to skip count the following.

a. forward by 5s from 347

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b. backward by 2s from 972

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5. Count by 25s. Write the numbers that come next.

a. 425 450 475 \_\_\_\_\_

b. 100 125 150 \_\_\_\_\_

c. 850 875 900 \_\_\_\_\_

6. Describe each number pattern, and extend the pattern.

a. 398 408 418 428 \_\_\_\_\_

Description: \_\_\_\_\_

b. 145 140 135 130 \_\_\_\_\_

Description: \_\_\_\_\_

c. 781 681 581 481 \_\_\_\_\_

Description: \_\_\_\_\_

d. 431 433 435 437 \_\_\_\_\_

Description: \_\_\_\_\_

e. 175 200 225 250 \_\_\_\_\_

Description: \_\_\_\_\_

7. Luke's mom kept a record of his weight on a chart. Luke noticed a pattern. If the pattern continues, how much did Luke weigh when he was 6 years old?

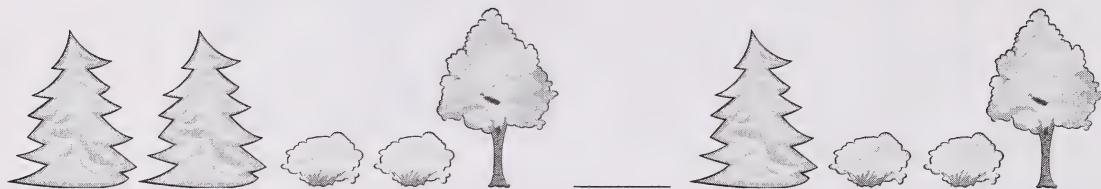
Age	Weight (kilograms)
1	9
2	14
3	19
4	24
5	
6	

Luke weighed \_\_\_\_\_ kilograms when he was 6 years old.

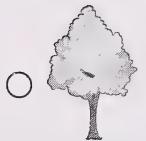
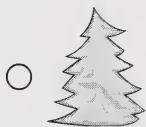
Fill in the circle that shows the correct answer to each of the following questions.

After Luke studied patterns in school, he began to notice patterns everywhere.

8. In the city park, the trees looked like this.



There is a missing tree. Which tree should the gardeners plant in the space?



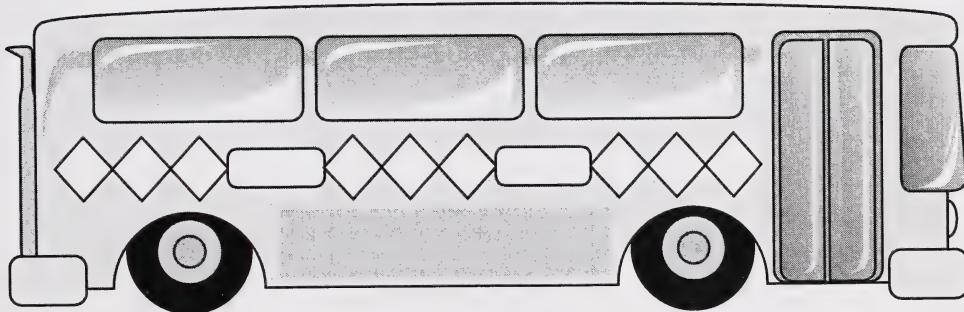
9. Luke watched some city buses go by as he waited for his school bus. He noticed a pattern in the numbers.



If the pattern continues, what bus number will come next?

- 689
- 389
- 589
- 598

10. Luke's bus had a design on both sides that looked like this.



How many diamonds are there in all?

- 18
- 9
- 27
- 36

11. Luke's teacher asked him to count backward by 5s from 290. Which numbers should he say?

- 290, 280, 270, 260, 250
- 290, 295, 300, 305, 310
- 290, 285, 280, 275, 270
- 290, 288, 286, 284, 282

12. Luke counted by 10s from 3 and coloured in the numbers on the hundred chart. What pattern would he see on the chart?

- several rows coloured going across the hundred chart
- one row coloured going across the hundred chart
- several columns coloured going up and down on the hundred chart
- one column coloured going up and down the hundred chart

**Timed exercise: 2 minutes**

Ask your Home Instructor to time you for 2 minutes. Do as many questions as you can in two minutes. Write how many you completed.

$16 - 7 = \underline{\hspace{2cm}}$     $17 - 9 = \underline{\hspace{2cm}}$     $12 - 9 = \underline{\hspace{2cm}}$     $10 - 3 = \underline{\hspace{2cm}}$

$12 - 5 = \underline{\hspace{2cm}}$     $13 - 6 = \underline{\hspace{2cm}}$     $15 - 8 = \underline{\hspace{2cm}}$     $11 - 7 = \underline{\hspace{2cm}}$

$14 - 7 = \underline{\hspace{2cm}}$     $17 - 8 = \underline{\hspace{2cm}}$     $13 - 5 = \underline{\hspace{2cm}}$     $14 - 6 = \underline{\hspace{2cm}}$

$$\begin{array}{r} 14 \\ - 5 \\ \hline \end{array}$$
   
$$\begin{array}{r} 12 \\ - 7 \\ \hline \end{array}$$
   
$$\begin{array}{r} 10 \\ - 8 \\ \hline \end{array}$$
   
$$\begin{array}{r} 13 \\ - 4 \\ \hline \end{array}$$

$$\begin{array}{r} 15 \\ - 6 \\ \hline \end{array}$$
   
$$\begin{array}{r} 16 \\ - 8 \\ \hline \end{array}$$
   
$$\begin{array}{r} 18 \\ - 9 \\ \hline \end{array}$$
   
$$\begin{array}{r} 11 \\ - 2 \\ \hline \end{array}$$

<b>Number completed</b>	
<b>Number correct</b>	

**STUDENT'S CHECKLIST**  
**MODULE 3: DAYS 10 TO 18**

I can . . .	Put a check mark beside the things you can do.
count by 25s	
count backward by 2s, 5s, 10s, and 100s.	
extend a number pattern	
use a number pattern to solve a problem	

**STUDENT'S COMMENTS**

Something I don't really understand is \_\_\_\_\_

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One thing I liked in this part of the module is \_\_\_\_\_

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## **HOME INSTRUCTOR'S CHECKLIST**

Check **yes** or **not yet** for each question.

Can the student do the following?

- count by 25s     yes     not yet
- recognize a number pattern and make up a description or rule for it     yes     not yet
- extend a number pattern     yes     not yet
- use a number pattern to solve word problems     yes     not yet
- count backward by 2s, 5s, 10s, and 100s     yes     not yet
- make predictions based on addition and subtraction patterns     yes     not yet

## **HOME INSTRUCTOR'S COMMENTS**

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